

*Sub F1*  
*AM*  
*Contd*

semiconductor film and function to promote the crystallization of the semiconductor film;

forming a gettering layer over said semiconductor film after the crystallization; and

heating said semiconductor film and said gettering layer at a temperature from 500°C to 800°C in order to getter the catalyst metal in said semiconductor film using said gettering layer.

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34. (Amended) A method of manufacturing a device comprising the steps of:

*Sub F3*  
*AM*

providing a substantially intrinsic semiconductor film on an insulating surface;

providing said semiconductor film with a catalyst metal-containing material;

crystallizing said semiconductor film by heating in a way that causes said catalyst metal to diffuse through the semiconductor film and function to promote the crystallization of said semiconductor film;

forming a gettering layer over said semiconductor film after the crystallization; and

heating said semiconductor film and said gettering layer in order to getter the catalyst metal in said semiconductor film by said gettering layer.

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42. (Amended) A method of manufacturing a device comprising the steps of:

*Sub F5*

providing a semiconductor film on an insulating surface;

providing a catalyst metal-containing material on said semiconductor film;

*Sub F5*  
~~Sub F5~~  
*Cont'd*

crystallizing said semiconductor film by heating in a way that causes said catalyst metal to diffuse through the semiconductor film and function to promote the crystallization of said semiconductor film;

forming a gettering layer over said semiconductor film after the crystallization; and

heating said semiconductor film and said gettering layer in a nitrogen atmosphere in order to getter the catalyst metal contained in said semiconductor film by said gettering layer.

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51. (Amended) A method of manufacturing a device having a junction, said method comprising the steps of:

*Sub F7*  
~~Sub F7~~

providing a semiconductor film comprising amorphous silicon on an insulating surface;

providing a catalyst metal-containing material on said semiconductor film;

crystallizing said semiconductor film by heating in a way that causes said metal to diffuse through the semiconductor film and to promote the crystallization thereof;

forming a gettering layer over said semiconductor film after the crystallization;

heating said semiconductor film and said gettering layer at a temperature from 500°C to 800°C in order to getter the metal included in said semiconductor film by said gettering layer; and

forming a doped semiconductor film on said semiconductor film to form a junction.

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*Sub F9*  
~~Sub F9~~

59. (Amended) A method of manufacturing a device having a junction, said method comprising the steps of:

providing a substantially intrinsic semiconductor film on an insulating surface;

*Sub F9*  
providing a catalyst metal on said semiconductor film;  
crystallizing said semiconductor film by heating to cause said catalyst metal to diffuse through the semiconductor film and to promote the crystallization of said semiconductor film;

*B7 Cmt d*  
forming a gettering layer over said semiconductor film after the crystallization thereof;

heating said semiconductor film and said gettering layer in order to getter the catalyst metal in said semiconductor film by said gettering layer; and

forming a junction using said intrinsic semiconductor film.

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67. (Amended) A method of manufacturing a device having a junction, said method comprising the steps of:

providing a semiconductor film comprising amorphous silicon formed on an insulating surface;

providing a catalyst metal-containing material on said semiconductor film;

*Sub F11*  
crystallizing said semiconductor film by heating in a way that causes said catalyst metal to diffuse through the semiconductor film and function to promote the crystallization of said semiconductor film;

forming a gettering layer over said semiconductor film after the crystallization; and

heating said semiconductor film and said gettering layer in a nitrogen atmosphere in order to getter the catalyst metal contained in said semiconductor film by said gettering layer; and

Sub  
Fil  
Cont'd

forming a junction on said semiconductor film.

76. (Amended) A method of manufacturing a device,  
comprising the steps of:

providing a semiconductor film on an insulating  
surface;

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F13  
Forming a catalyst metal-containing material on said  
semiconductor film, said catalyst being a material which  
facilitates crystallization of said semiconductor film, but  
which when present in a final product of the device degrades  
operation of the device;

crystallizing said semiconductor film by heating in a  
way that causes said catalyst metal-containing material to  
diffuse into at least a part of the semiconductor film, said  
catalyst metal-containing material when so diffused functioning  
to facilitate said crystallization;

forming a gettering layer over said semiconductor film  
after said crystallization; and

processing said semiconductor film and said gettering  
layer to remove at least one portion of said catalyst metal in  
said semiconductor film.

81. (Amended) A method of manufacturing a device  
comprising the steps of:

providing a semiconductor film on an insulating  
surface;

providing said semiconductor film with a metal-  
containing material;

crystallizing said semiconductor film by heating in a  
way that causes said metal to diffuse through the semiconductor

film and function to promote the crystallization of the semiconductor film;

introducing a gettering element into a portion of said crystallized semiconductor film;

heating said semiconductor film after introducing said gettering element at a temperature from 500°C to 800°C in order to getter the metal in said semiconductor film; and

removing said portion after gettering the metal in said semiconductor film.

*Sub  
Fig 4*

82. (Amended) A method of manufacturing a device comprising the steps of:

providing a semiconductor film doped with boron at a concentration of 0.001-0.1 atm% on an insulating surface;

providing said semiconductor film with a metal-containing material;

crystallizing said semiconductor film by heating in a way that causes said metal to diffuse through the semiconductor film and function to promote the crystallization of said semiconductor film;

forming a gettering layer over said semiconductor film after the crystallization; and

heating said semiconductor film and said gettering layer in order to getter the metal in said semiconductor film by said gettering layer.

83. (Amended) A method of manufacturing a device comprising the steps of:

providing a substantially intrinsic semiconductor film on an insulating surface;

*Sub P14*  
*Contra*

providing said semiconductor film with a metal-containing material;

crystallizing said semiconductor film by heating in a way that causes said metal to diffuse through the semiconductor film and function to promote the crystallization of ~~said~~ semiconductor film;

introducing a gettering element into a portion of the crystallized semiconductor film;

heating said semiconductor film after introducing said gettering element in order to getter the metal in said semiconductor film; and

removing said portion after gettering the metal in said semiconductor film.

84. (Amended) A method of manufacturing a device comprising the steps of:

providing a semiconductor film doped with boron at a concentration of 0.001-0.1 atm% on an insulating surface;

providing said semiconductor film with a metal-containing material;

crystallizing said semiconductor film by heating in a way that causes said metal to diffuse through the semiconductor film and function to promote the crystallization of said semiconductor film;

introducing a gettering element into a portion of the crystallized semiconductor film;

heating said semiconductor film after introducing said gettering element in order to getter the metal in said semiconductor film; and

removing said portion after gettering the metal in said semiconductor film.

85. (Amended) A method of manufacturing a device comprising the steps of:

providing a semiconductor film on an insulating surface;

providing a metal-containing material on said semiconductor film;

*Sub F14*  
crystallizing said semiconductor film by heating in a way that causes said metal to diffuse through the semiconductor film and function to promote the crystallization of said semiconductor film;

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introducing a gettering element into a portion of the crystallized semiconductor film;

heating said semiconductor film in a nitrogen atmosphere after introducing said gettering element in order to getter the metal contained in said semiconductor film; and

removing said portion after gettering the metal in said semiconductor film.

86. (Amended) A method of manufacturing a device having a junction, said method comprising the steps of:

providing a semiconductor film doped with boron at a concentration of 0.001-0.1 atm% on an insulating surface;

providing a metal on said semiconductor film;

crystallizing said semiconductor film by heating to cause said metal to diffuse through the semiconductor film and to promote the crystallization of said semiconductor film;

forming a gettering layer over said semiconductor film after the crystallization thereof;

heating said semiconductor film and said gettering layer in order to getter the metal in said semiconductor film by said gettering layer; and

forming a junction using an intrinsic semiconductor film.

87. (Amended) A method of manufacturing a device having a junction, said method comprising the steps of:

*Sub F14*  
*B/C*  
*W/T*  
providing a substantially intrinsic semiconductor film on an insulating surface;

providing a metal on said semiconductor film;

crystallizing said semiconductor film by heating to cause said metal to diffuse through the semiconductor film and to promote the crystallization of said semiconductor film;

introducing a gettering element into a portion of the crystallized semiconductor film [by plasma doping];

heating said semiconductor film after introducing said gettering element in order to getter the metal in said semiconductor film by said phosphorus;

removing said portion after gettering the metal in said semiconductor film; and

forming a junction using a doped semiconductor film.

88. (Amended) A method of manufacturing a device having a junction, said method comprising the steps of:

providing a semiconductor film doped with boron at a concentration of 0.001-0.1 atm% on an insulating surface;

providing a metal on said semiconductor film;

crystallizing said semiconductor film by heating to cause said metal to diffuse through the semiconductor film and to promote the crystallization of said semiconductor film;

introducing a gettering element into a portion of the crystallized semiconductor film;

heating said semiconductor film and said gettering element in order to getter the metal in said semiconductor film

removing said portion after gettering the metal in said semiconductor film; and

forming a junction using an intrinsic semiconductor film.

*Sub  
F14  
Cont'd*  
89. (Amended) A method of manufacturing a device comprising the steps of:

providing a semiconductor film on an insulating surface;

forming a metal-containing material on said semiconductor film, said metal being a material which facilitates crystallization of said semiconductor film, but which when present in a final product of the device degrades operation of the device;

crystallizing said semiconductor film by heating in a way that causes said metal-containing material to diffuse into at least a part of the semiconductor film, said metal-containing material when so diffused functioning to facilitate said crystallization;

introducing a gettering element into a portion of the crystallized semiconductor film;

processing said semiconductor film after introducing said gettering element to remove at least one portion of said metal in said semiconductor film; and

removing said portion after gettering the metal in said semiconductor film.

Please add new claims 103-106 as follows.

*Sub H1*  
--103. (New) A method according to any one of claims 26, 34, 42, 51, 59, 67, 76, 82, or 86 wherein said gettering layer is formed by a CVD method.

*Sub F16*  
104. (New) A method according to any one of claims 81, 83-85, or 87-89, wherein said gettering element comprises phosphorus.

*E9*  
105. (New) A method according to any one of claims 81, 83-85, or 87-89, wherein said gettering <sup>material</sup> element is introduced by a plasma doping method.

*Sub H1*  
106. (New) A method according to any one of claims 26, 34, 42, 51, 59, 67, 76, 82, or 86, wherein said gettering layer is in contact with said semiconductor film.--